R E P O R T R E S U M E S

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A FOLIO OF ILLUSTRATIVE EXERCISES FROM CHICAGO CITY JUNIOR COLLEGE ENGLISH AND GENERAL COURSE FINAL EXAMINATIONS.

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THESE EXAMPLES OF FINAL EXAMINATION ITEMS INCLUDE ENGLISH, BIOLOGY, HUMANITIES, PHYSICAL SCIENCE, AND SOCIAL SCIENCE. THEY ARE INTENDED FOR USE IN EVALUATING THE STUDENT'S INTELLECTUAL SKILL RATHER THAN HIS MEMORY. ALMOST ALL ITEMS ARE OF THE MULTIPLE-CHOICE AND KEY-LIST TYPES, WITH NO TRUE-FALSE QUESTIONS. TO SOME EXTENT, USE IS MADE OF EXERCISES APPROPRIATE TO MACHINE SCORING. THE SCORING OF EXAMINATIONS AND THE ANALYSIS AND USE OF TEST DATA AT CHICAGO CITY JUNIOR COLLEGE ARE DESCRIBED. (HH)

ERIC

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A FOLIO OF

ILLUSTRATIVE EXERCISES

FROM

CHICAGO CITY JUNIOR COLLEGE

ENGLISH AND GENERAL COURSE

FINAL EXAMINATIONS

UNIVERSITY OF CALIF.
LOS ANGELES

OCT 3 1967

CLEARINGHOUSE FOR
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CHICAGO CITY JUNIOR COLLEGE
CHICAGO, ILLINOIS

JC 670 859

Evaluation of achievement in English composition and in the general courses is accomplished in part by final examinations constructed by faculty members with the assistance of the staff of the Division of Institutional Research and Evaluation. The illustrative exercises presented on the following pages have been selected from examinations in English, Biology, the Humanities, Physical Science, and Social Science. The exercises selected are primarily the kinds of exercises useful in evaluating student acquisition of intellectual skills rather than memory of facts. Almost all of the items here presented are of the multiple-choice and key-list types. No use is made of true-false items since such items are usually of questionable value. Some use is made of matching exercises appropriate for machine scoring, but not long series of items to be matched with long series of answers. Such exercises are too likely to have relevance only to isolated and often trivial subject matter. The types of objective exercises here illustrated are thought to accomplish some of the purposes of essay exercises without the disadvantage of subjectivity of scoring. It should be noted, however, that the major factor in determining course marks in English composition is teacher evaluation of student writing.

Midterm and final objective examinations are scored at the rate of 1200 an hour on either of two IBM 1230 electronic scoring machines. The examinations are later subjected to elaborate item analysis using an IBM 1231 and computer equipment. The data include the percentages of students giving each correct and each incorrect answer and indices of how well each item discriminates between superior and below average students. The data thus obtained are used by members of the faculties concerned in both the improvement of the test exercises for future use and in evaluating attainment of instructional objectives.

In reading the illustrative exercises presented in this booklet do not be dismayed if you cannot answer more than a few of them. The students subjected to them have also recently been subjected to the relevant instruction. If, however, you do attempt to answer some of the items, you can check your answers with those listed on page 24.

Max D. Engelhart
Henry Moughamian

May, 1966

ENGLISH

Spelling. Each numbered sentence below contains a word with one or more blanks in it, each blank representing one or more missing letters. Choose the letter or letters you think should complete the word and blacken A, B, C, D, or E on your answer sheet. The answer "SE" stands for Something Else; that is, some other letter or combination of letters.

1. His was a modest achi__ment.
(A. ev; B. v; C. eve; D. ve; E. SE)

2. The situation was desp__te.
(A. iri; B. era; C. eri; D. ari; E. SE)

3. Is it permi__ble to ask such a question?
(A. si; B. sa; C. ssa; D. ssi; E. SE)

4. Look at the pre__ing sentence.
(A. ced; B. ceed; C. cede; D. eced; E. SE)

5. His personality was chan__ble.
(A. gea; B. ga; C. gei; D. gi; E. SE)

6. There is a great difference between the amat__r and the professional.
(A. u; B. eu; C. ue; D. oo; E. SE)

7. He was thoroughly di__at__sfied.
(A. s...i; B. s...e; C. ss...e; D. ss...i; E. SE)

8. He was the ind__spens__ble man.
(A. e...a; B. i...a; C. e...i; D. i...e; E. SE)

9. Care reduces the oc__r__nce of accidents.
(A. cu...ra; B. u...e; C. cu...re; D. u...a; E. SE)

10. His gift was an act of personal sacr__fice.
(A. i; B. e; C. a; D. u; E. SE)

11. This order will super__de last week's.
(A. si; B. see; C. ci; D. ce; E. SE)

12. The cars were sim__l__r.
(A. i...e; B. a...e; C. i...a; D. a...i; E. SE)

13. It was a matter of veng__nce.
(A. ia; B. e; C. ie; D. ea; E. SE)

14. It was tr__y a remarkable event.
(A. ul; B. ule; C. ull; D. ulle; E. SE)

15. The alternative was not desi__ble.
(A. ra; B. rea; C. ri; D. rei; E. SE)

Similar Words. (Diction). In each item below you are given several choices among words that are sometimes confused in writing. For each case only one version is correct. On your answer sheet, blacken the space indicating the letter that corresponds to the correct version.

16. He declined to
A. except their forth offer.
B. accept they're forth offer.
C. accept their fourth offer.
D. except there fourth offer.

17. We decided to
A. altar the coarse.
B. alter the course.
C. alter the coarse.
D. altar the course.

18. While in the city, they did not visit but only
A. passed by its principle sites.
B. past by its principal cites.
C. past by its principle sites.
D. passed by its principal sights.

19. His attitude had an
A. effect on our advice.
B. affect on our advise.
C. effect on our advise.
D. affect on are advice.

20. The sailor reported that the moorings
A. were to loose.
B. where to lose.
C. were too loose.
D. where two lose.

21. The pilot flew the plane
A. thorough all types of whether.
B. through all types of weather.
C. thorough all types of weather.
D. through all types of whether.

22. The ambassador commended you for
A. your quiet peace efforts.
B. your quite piece efforts.
C. you're quiet peace efforts.
D. you're quite piece efforts.

23. This substance is more of a poison
A. then an antidote.
B. then an anecdote.
C. than an anecdote.
D. than an antidote.

24. The manager made uncomplimentary
A. allusions about his personnel.
B. illusions about his personal.
C. allusions about his personal.
D. illusions about his personnel.

25. The city clerk
A. formerly registered the woman's berth record.
B. formally registered the woman's birth record.
C. formally registered the women's berth record.
D. formerly registered the womens' birth record.

Punctuation and Mechanics. Most of the items below are concerned with ordinary punctuation marks. A few are concerned with such special marks as the apostrophe, dash, and quotation marks. On your answer sheet, blacken the space indicating that the sentence

A lacks necessary punctuation (e.g. an omitted comma)
B has too much (misleading because superfluous) punctuation
C uses a wrong mark (e.g. a period instead of a question mark)
D misplaces a mark (e.g. an apostrophe or quotation marks)
E is correct (acceptably punctuated) as it stands

26. Towards the end of winter time always seems to drag until the first warm days.

27. "Civilization, I repeat, is a function of numbers," he said, "and of the contact of numbers."

28. Do you believe, as some people do, that successful, fortunate crime is often called virtue.

29. Having swallowed the worm with the hook concealed in it, a large fish now became visible floundering in the shallow water.

30. The Chinese, for example, were not the inventors of movable-type printing, nor did the Arebs invent our number notation; such myths are very tenacious of life.

31. Although life in a modern city is demanding, we cannot abandon this intense exacting social organization without a sacrifice of comfort, convenience, and safety.

32. The editors notes abound with interesting, witty quotations; they have the rare merit of really elucidating the text.

33. Many radicals proclaim that capitalism is decaying; and many conservatives gloomily assert that it is being ruined by bad public policies.

34. To adjust oneself to the enjoyment of new interests and experiences, demands an intellectual effort which many people are not willing to make.

35. A very large part of what people suppose to be courage is simply familiarity with the situation; even a tiger is timid away from home; though I must say he gets over it rather quickly.

(10 of 20 items)

Grammar or Usage. Each of the following sentences is continued through four lettered lines. Each sentence contains one mistake in grammar or usage -- wrong tense, wrong word form (including possessive case indicators), or nonstandard phrasing. Informal usage is acceptable if it is correct. On your answer sheet, blacken the one space indicating the part of the sentence containing the error.

Items

36. A. Along the north wall
B. of the room was placed
C. a floor lamp with a blue shade,
D. a cabinet, and a small table.

37. A. The community was very shocked
B. when the president as well as the
C. treasurer were accused of mismanagement
D. of the company's funds.

38. A. He is one of those people
B. who find it impossibly difficult
C. to keep calm and speak distinct when
D. they are called on to make a short speech.

39. A. There is not many a politician
B. who, when questioned on touchy issues,
C. thinks that a simple yes or no
D. are the best answers.

40. A. After watching people lying
B. on the beach all summer, I
C. decided that if I were them
D. I would have lain there too,

41. A. The man tasted the wines very
B. slowly, and then finally remarked
C. that of all the wines he tasted,
D. the sherry seemed the sweetest.

42. A. It came as a surprise to John and me
B. that someone whom we had so much respected
C. should suddenly turn out to be
D. too prejudice to join our team.

43. A. Neither the doctor nor the lawyer,
B. whom I believe are trustworthy,
C. is responsible for the fact
D. that the news has spread everywhere.

44. A. It is the duty of each citizen
B. who wants to make the democratic
C. form of government work to keep
D. themselves fully informed

Sentence Recognition. The following items are printed here without internal punctuation. You are to count the sentences in each item. Most of the items contain one or more complete sentences. A few are incomplete sentences (sentence fragments). On your answer sheet, blacken the space indicating that the item contains

A one sentence
B two sentences
C three sentences
D four or more sentences
E no sentence: the sentence is incomplete (a fragment)

Regard as a sentence any expression which might be followed by a semicolon or a period.

---

45. Ages ago in the crowded countries of the world men turned to oil-yielding plants for their fats as America becomes more thickly populated and our fertile soils more scarce we can be sure that our children and grandchildren will be eating less pork beef and chicken.

46. Although oils from corn soybeans peanuts cottonseed and coconuts have already replaced most of the animal fats in our diet olive oil that aristocrat of all edible oils is also being imported by the millions of gallons for our fancy cooking and salads.

47. The cultivated varieties are more compact and less spiny than the wild olive they have smooth leathery evergreen leaves which are grayish-green above and whitish below the olive does not begin to bear fruit until about twenty years of age this Methuselah among cultivated trees sometimes yields for hundreds of years.

48. Since the oil which is contained in the flesh may make up as much as 60 per cent of the weight of the fully ripe fruit and the best quality or rich yellow "virgin" oil used for salads is made from hand-picked fruit which is carefully crushed and squeezed in presses.

49. When Thomas Jefferson was minister to France during the Revolutionary War and continuing for the next 35 years he imported olive trees and seeds and many times attempted to establish olive-growing in our southern states at about the same time as Jefferson was failing because of the excessive humidity of the Carolinas and Georgia the Spanish padres succeeded in the drier climate of southern California there olive culture did not spread far beyond the Franciscan missions until about 1800.

(5 of 10 items)

Sentence Building (Construction Shift). In this exercise you show your ability to express an idea in more than one way. Each item below begins with a correct sentence. You are to rewrite it (in your mind) as indicated just below it WITHOUT CHANGING THE MEANING, or with as little change in meaning as the shift in sentence plan will allow.

EXAMPLE: He is compelled by circumstances to earn his own living.
Circumstances . . . . . .
Somewhere in the rewritten sentence is the word (A. made; B. he; C. him; D. compelled).

Explanation: Complete the unfinished sentence in your mind, thus: "Circumstances compel him to earn his own living." The right answer is C--"him." Any other answer, for example D--"compelled," would needlessly change the meaning of the sentence. Remember that you are not correcting the original sentence; there is nothing wrong with it. You are merely shifting its construction.

---

50. A strong navy ceased to be a decisive military advantage only with the rise of air power.
Not until . . . . . .
The rebuilt sentence contains the expression (A. ceased; B. would cease; C. then; D. risen; E. did).

51. Bill told us that he expected to receive his pilot's license soon.
(Put what Bill said in quotation marks.)
The rebuilt sentence contains the word (A. will; B. my; C. expecting; D. he; E. receiving).

52. The Army objected to the material of the new uniforms because it would be too easily visible at night.
The Army's objection . . . . . .
The rebuilt sentence contains the expression (A. because; B. due to; C. on account of; D. that; E. is).

53. The only thing which influenced my decision to vote for the candidate was his stand on public power.
My decision . . . . . .
The rebuilt sentence contains the word (A. by; B. thing; C. stood; D. which; E. influence).

54. You must practice continually if you hope to achieve expertness in playing tennis.
Anyone . . . . . .
The rebuilt sentence contains the word (A. practices; B. achieves; C. hopes; D. you; E. they).

(5 of 10 items)

Paragraph Organization. Each of the following three sets of sentences is a complete paragraph, but the sentences are not in their proper order. Read each set of sentences through and decide how it should be arranged to produce a well organized paragraph. Then, for each sentence, blacken one lettered space on your answer sheet to indicate that

A this is the topic sentence, telling what the paragraph is about
B this sentence takes off from the topic sentence, beginning the development of the topic idea
C this sentence continues the development
D this sentence further continues the development
E this sentence comes at the end of the paragraph

PARAGRAPH I

55. All typewriters, linotypes, and other writing machines would have to be redesigned, and their users would have to be re-trained.

56. For example, if it were adopted, all alphabetized books, indexes, and files would have to be revised according to the new alphabet.

57. Though phonetic spelling has many important technical uses, its chances of superseding the present system are extremely small.

58. It is too revolutionary.

59. All adults would have to be re-trained to read the "new" publications; and the children would have to be "double-trained" -- that is, they would have to be taught both the new and the old methods of reading.

(5 of 15 items)

Dictionary Items. Blacken one lettered space to designate the correct answer. (Page 733 of the American College Dictionary was reproduced for use by the examinees.)

60. If an anthropologist wrote, "The concept of the magus in many ancient civilizations is an interesting one, and it is interesting to note its relationship to the meaning most often attached to its familiar plural form, magi," his meaning would most probably be clarified by
A. the first meaning of magus.
B. the second meaning of magus.
C. the second meaning of magus plus more knowledge about Simon Magus.
D. the second meaning of magus plus the entry Magi, definition 1.
E. the second meaning of magus plus the entry for charlatan.

61. A writer wishing to pinpoint the precise difference in meaning between magnificent and superb could best accomplish his aim by consulting
A. the synonymy or synonym study of magnificent.
B. the etymologies of magnificent and superb.
C. definitions 1 and 2 of magnificent.
D. the sample contexts in the definition of magnificent.

62. The word magnoliaceous is accented
A. on the second syllable.
B. on the third syllable.
C. on the fourth syllable.
D. on the second and fourth syllables, with the second syllable receiving more stress.
E. on the second and fourth syllables, with the fourth syllable receiving more stress.

(6 of 15 items)

63. A variation in spelling of mah-jongg occurs because of
A. a variation of pronunciation in the last syllable for some speakers.
B. an alternative spelling given in the Mandarin Chinese.
C. differences in stress which require differences in spelling.
D. reasons which cannot be ascertained from the dictionary entry.
E. the possibility of optionally using or not using the hyphen.

The following two questions refer to the underlined words in this sentence: "The magnification revealed stains which the crime laboratory later found to be blood stains, but their importance has been much magnified."

64. Which definition of magnification makes the best sense?
A. 1.
B. 2.
C. 3.
D. 4.
E. a figurative extension of definition 3.

65. Which definition of magnified makes the best sense?
A. 1.
B. 2.
C. 3.
D. one of the synonyms for meaning 2.
E. one of the synonyms for meaning 3.

The last 46 items of this 150 item objective English final examination are relevant to a one page selection reproduced three times in the examination on pages facing the multiple-choice items. In addition to vocabulary and general reading comprehension items, some items concern compositional aspects of the selection.

BIOLOGY

On a cold winter day, a Chicagoan, Mrs. Dorothy Mae Stevens, was found unconscious in a passageway after a night of exposure to 11 degree subzero weather, "she was literally frozen stiff." Her temperature had dropped to an unprecedented 64 degrees (Fahrenheit). Twenty hours after her arrival at Michael Reese Hospital, her temperature had risen to 98.2 degrees. Early Friday it was 101 and later 100. On Saturday it was also 100. When she was first found, her breathing had slowed to 3 times a minute. By Saturday it was up to 24 a minute. Her blood pressure was zero on Thursday. By Saturday it was 132 over 80. On Thursday her pulse rate was 12 a minute; on Saturday it was 100. Cortisone was administered early.

---

66. On Thursday Mrs. Stevens' temperature was
    A. approximately 14 degrees lower than normal.
    B. approximately 24 degrees lower than normal.
    C. considered low but not unusual because the temperature of man fluctuates as much as 40-50 degrees depending upon the external temperature.
    D. approximately 34 degrees lower than normal.
    E. approximately 44 degrees lower than normal.

67. At a body temperature of 64 degrees
    A. the blood and lymph are frozen.
    B. the blood carries more oxygen to the cells than normally, because more gases dissolve in fluids at low temperatures rather than at high temperatures.
    C. the blood vessels of the skin are dilated, because the vasoconstrictor muscles are relaxed.
    D. the heart beats more rapidly, because the cold stimulates the heart center in the medulla.
    E. most activities slow down, because all chemical activities decrease as the temperature falls.

68. Under normal conditions a sharp rise in external temperature would result in
    A. no bodily change.
    B. dilation of blood vessels in the skin and an increase in secretion of sweat.
    C. constriction of blood vessels in the skin and an increase in secretion of sweat.
    D. dilation of blood vessels in the skin and a decrease in secretion of sweat.
    E. constriction of blood vessels in the skin and a decrease in secretion of sweat.

69. Most of the heat lost from Mrs. Stevens' body by radiation, conduction, or convection was brought directly to the skin by the
    A. heat receptors.
    B. blood.
    C. muscles.
    D. oxidation of foods.
    E. sweat.

70. The immediate cause of Mrs. Stevens' unconsciousness was probably due to the
    A. lack of a sufficient amount of oxygen to the brain cells.
    B. lowering of the external temperature.
    C. slow pulse rate.
    D. decrease in muscle tone.
    E. low breathing rate.

71. At the temperature of 64 degrees the enzymes in the body
    A. are totally ineffective, but not destroyed.
    B. are more active than at higher temperatures.
    C. are destroyed.
    D. are not affected in any way; they cause as rapid chemical changes as at higher temperatures.
    E. act more slowly than at higher temperatures.

72. Under normal conditions most of the heat lost from Mrs. Stevens' body would be lost by
    A. elimination of urine and feces.
    B. warming of foods and fluids passing along the digestive tract.
    C. elimination of warmed air from the lungs.
    D. warming of cold air entering the lungs.
    E. evaporation of sweat and radiation and conduction of heat from the skin.

73. The immediate source of most of the heat normally needed for maintaining Mrs. Stevens' body temperature is the
    A. contraction of muscles.
    B. exchange of gases between atmosphere and lung tissue.
    C. exchange of gases between blood and cells of the body.
    D. heat regulating center in the brain.
    E. secretion by glands.

In 1822, Alexis San Martin, a Canadian trapper, age 18, was accidentally wounded in the stomach with shotgun pellets. Amazingly enough he recovered, but with a permanent opening the size of a quarter in his side. His doctor, the great American surgeon William Beaumont, made medical history by putting food directly into the stomach through this window-like opening. In one such instance, a piece of beef (attached to a string and lowered into the stomach) was completely digested in five hours. In another experiment Dr. Beaumont withdrew some gastric juice with the aid of a glass tube thrust into the opening. This almost-transparent fluid was placed in a glass dish. Another piece of beef was placed into this gastric juice and kept at the same temperature as the body. In two hours muscle fibers had separated from each other. In six hours nearly all of the fibers were digested. In ten hours every particle of beef was completely digested.

For each of the following items, blacken one lettered space to indicate that the statement
A is true on the basis of the account given above
B is true but not on the basis of the account
C is false on the basis of the account
D is false but not on the basis of the account

74. An enzyme is an organic catalyst of protein nature which brings about a chemical change at normal temperature without itself being used up in the process.

75. Dr. Beaumont proved that gastric juice digested protein.

76. Protein can be digested by gastric juice both inside of and outside of the stomach.

77. Gastric protease is effective only in the presence of an acid.

78. The reason that the meat was digested faster in the body was because the body temperature was higher than that of the gastric juice in the dish.

(5 of 13 items)

The following items refer to the quoted paragraph. After each item number on the answer sheet, blacken one lettered space to indicate the best answer.

(1) "After we have started mechanical irritation of these places [front and hind leg] with the pricking apparatus, then acid is poured into the mouth of the dog. (2) The secretion of saliva produced by the acid is, of course, a simple inborn reflex. (3) This is repeated several times.... (4) After a number of experiments a state of affairs results in which we get a flow of saliva when we begin only to irritate that spot of the skin; it is just as if we had poured acid into the dog's mouth."

79. If, at the beginning of the experiment, the flashing of a strong colored light in the eyes of the dog had been substituted for mechanical irritation of the fore and hind limbs, eventually
A. flashing of the light alone would probably have resulted in secretion of saliva.
B. flashing of the light alone would have no effect.
C. flashing of the light would have resulted in salivation only if accompanied by irritation of limb.
D. irritation of the limbs alone would still have produced salivation.

80. Had a man been subjected to the same experiment as a dog, the final results would have been that the man
A. would have felt the pricks and objected to them.
B. would have felt the pricks after several trials.
C. would have felt the pricks and would increase his saliva flow.
D. would not feel the pricks but would increase his saliva flow.
E. would show no reaction at all.

81. The same scientist who did this experiment did another on dogs in which a bell was rung each time acid was placed in the dog's mouth. After several trials, the result was that
A. the dog would howl when it heard the bell.
B. saliva would flow at the sound of the bell.
C. the dog's digestion improved because more digestive juice was produced.
D. the dog would withdraw its legs because it felt pricks on them.
E. nothing significant would happen.

(3 of 14 items)

For each of the following items, blacken <u>one</u> lettered space to indicate that the first thing is associated with

A an increase in the second
B a decrease in the second
C no change in the second

82. Hypersecretion of the parathyroids.
Calcium level of the blood.

83. Increase in the insulin level of the blood.
Sugar concentration of the blood.

84. Hypersecretion of ACTH.
Concentration of cortisone in the blood.

85. Hypothyroidism.
Basal metabolic rate.

86. Hyposecretion of the anterior pituitary during childhood.
Height potential of the child.

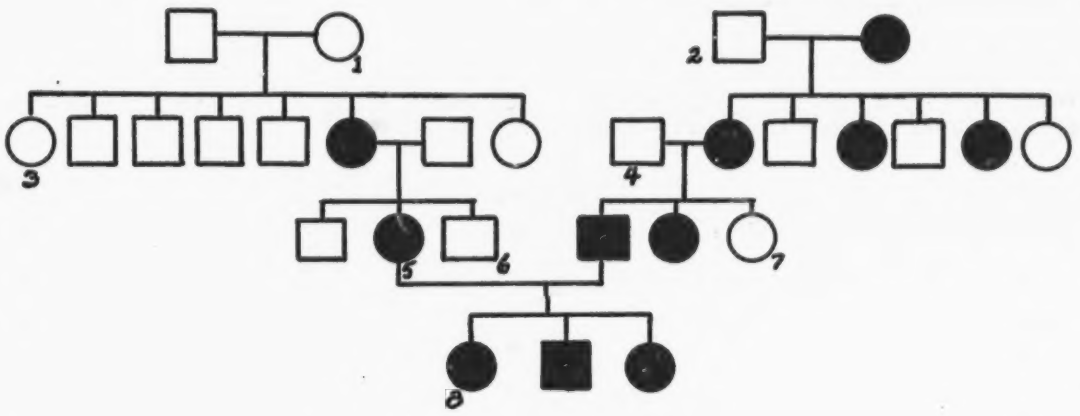
87. ACTH concentration.
Level of thyroxin in the blood.

88. Shading one side of the stem of a plant.
Distribution of auxin to the shaded side of stem.

89. Spraying tomato plants with secretin.
Fruit set of sprayed tomato plants.

(8 of 10 items)

In the pedigree below, squares are males, circles are females, and black indicates myopia.



90. From a study of the above pedigree, myopia appears to be
A. a dominant characteristic.
B. an autosomal recessive.
C. a lethal recessive.
D. an incompletely dominant characteristic.

91. To individual 5
A. each parent contributes a dominant gene.
B. one parent contributes a dominant gene and the other a recessive gene.
C. each parent contributes a recessive gene.
D. the kind of gene contributed by each parent cannot be determined from the pedigree.

92. Individual 7
A. receives a dominant gene from the father and a recessive gene from the mother.
B. receives a dominant gene from the mother and a recessive gene from the father.
C. receives a dominant gene from both parents.
D. receives a recessive gene from both parents.
E. has a father who is homozygous for the normal condition.

93. In order to have a myopic child like individual 8 in the pedigree
A. both parents carry only dominant genes.
B. both parents must carry a recessive gene.
C. one parent may contribute a dominant gene and the other a recessive gene.
D. the father transmits the recessive gene.

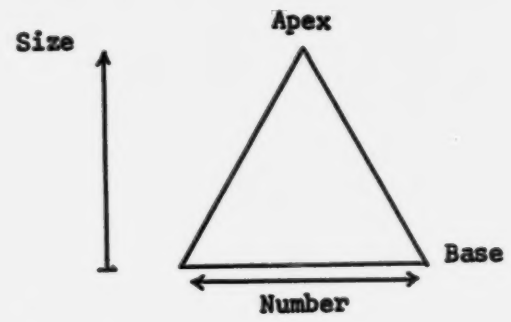
94. When both parents are affected by myopia
A. all their children will have myopic vision.
B. only their daughters will be affected.
C. only their sons will be affected.
D. one-half of their children will be normal and one-half will have myopia.

(5 of 10 items)

Complete the chart below by using the key listed above each column.

Key:	A. Primarily diffusion B. Closed blood vessels C. Open blood vessels D. Branched gastro-vascular cavity E. None of the above	A. 2-chambered heart B. 3-chambered heart C. 4-chambered heart D. Contractile blood vessel E. None of the above	A. Plasma only B. Red cells, white cells, platelets, plasma C. Only red cells and plasma D. Only white cells and plasma E. None of the above
ORGANISM	CIRCULATORY MECHANISM	PUMPING MECHANISM	BLOOD COMPONENTS
PLANARIA	95.	96.	97.
EARTHWORM	98.	99.	100.
FROG	101.	102.	103.
MAN	104.	105.	106.

The following diagram illustrates some ecological principles related to the numbers of organisms making up a community. On the answer sheet, blacken the space of the best answer.



107. The above diagram represents
   A. a food cycle, in a land community.
   B. the principle of ecological succession.
   C. key-industry animals.
   D. the pyramid of numbers in an ecological community.
   E. the effect of climate on animal communities.

108. The apex of the triangle represents individuals of
   A. large size and small number.
   B. small size and large number.
   C. small size and small number.
   D. large size and large number.

109. The apex of the triangle represents
   A. no carnivores.
   B. a few carnivores.
   C. many carnivores.
   D. more than one of the answers above.

(6 of 11 items)

110. The base of the triangle represents individuals of
   A. large size and small number.
   B. small size and large number.
   C. small size and small number.
   D. large size and large number.

111. The base of the triangle represents
   A. no carnivores.
   B. few carnivores.
   C. many carnivores.
   D. more than one of the answers above.

112. Green plants would most likely be
   A. at the apex of the triangle.
   B. at the base of the triangle.
   C. distributed throughout the triangle.
   D. excluded from the triangle.

HUMANITIES

The following items are to be answered on the basis of music played by the proctor of the examination. Do not attempt to answer them until the music is played.

Excerpt I will be played twice. (Beethoven Symphony #7, Opening of 2nd Movement)

113. The first playing of the theme with which the excerpt begins is
A. so simple as to be without musical value.
B. direct and unadorned in its simplicity.
C. composed of a simple, descending scale.
D. played with elaborate accompaniment.

114. The theme is stated first by
A. the entire orchestra.
B. all the strings.
C. the high strings.
D. the low strings.
E. the low woodwinds.

115. At the second playing of the original theme, variety is gained by
A. considerably altering the nature of the theme.
B. the playing of the theme backwards.
C. the introduction of another melody which is played with the first.
D. a change in tempo.

116. The third time the theme is played
A. by the full orchestra.
B. by the upper strings, with the other instruments accompanying.
C. by the lower strings with upper strings accompanying.
D. by woodwinds with string accompaniment.

117. The rhythm (meter) of the entire excerpt
A. is a constant duple meter.
B. is a constant triple meter.
C. begins with duple but changes to triple.
D. begins with triple but changes to duple.
E. is constantly changing.

118. The dynamic intensity of the sound becomes greatest in the
A. second playing of the theme.
B. third playing of the theme.
C. fourth playing of the theme.
D. fifth playing of the theme.
E. sixth playing of the theme.

119. The tempo for the playings of the theme
A. changes from andante to allegro.
B. changes from allegro to andante.
C. is constantly changing.
D. remains the same.

120. Formally, this excerpt may be described as
A. a fugue.
B. a rondo.
C. a theme and variation.
D. a minuet and trio.

121. Graphically, the form would be described
A. A $A^1A^2A^3$.
B. ABA.
C. ABACA.
D. ABA^1B.
E. A $A^1A^2A^3A^4A^5$.

(9 of 23 items on two excerpts)

For each of the following items, referring to the poetic excerpt below, blacken one lettered space to indicate the best answer.

1 Shall I compare thee to a summer's day?
Thou art more lovely and more temperate:
3 Rough winds do shake the darling buds of May,
And summer's lease hath all too short a date:
5 Sometime too hot the eye of heaven shines,
And often is his gold complexion dimm'd;
7 And every fair from fair sometime declines,
By chance or nature's changing course untrimm'd:
9 But thy eternal summer shall not fade
Nor lose possession of that fair thou ow'st;
11 Nor shall Death brag thou wander'st in his shade,
When in eternal lines to time thou grow'st:
13 So long as men can breathe, or eyes can see,
So long lives this, and this gives life to thee.

---

122. This poem is properly described by which of the following terms?
A. Dramatic monologue.
B. Ballad.
C. Elegy.
D. Ode.
E. Sonnet.

123. Why should it be described in this way?
A. It is told by a first-person narrator.
B. It tells a simple story.
C. It concerns death.
D. It celebrates love in an exalted manner.
E. It expresses lyrical matters in a certain formal pattern.

124. Line 6 is most clearly an example of
A. alliteration.
B. assonance.
C. onomatopoeia.
D. personification.
E. simile.

125. The prevailing rhythm and meter (particularly as illustrated by the last two lines) are
A. trochaic trimeter.
B. anapestic pentameter.
C. dactylic free verse.
D. iambic pentameter.
E. iambic tetrameter and pentameter.

126. The poem is like Dover Beach in that
A. both are elegies.
B. both oppose something unchanging to the sadness of change or loss.
C. both use a highly original rhyme scheme.
D. the narrators of both, although deeply in love, are beset by a feeling of hopelessness.
E. both concern mainly summer, love, youth, and happiness.

(5 of 12 items)

The items below refer to the following pictures at the Art Institute:

Blume	-	The Rock
Bracque	-	Still Life: Fruits and Guitar
Chagall	-	Naissance
De Chirico	-	The Philosophers Conquest
El Greco	-	Feast in the House of Saint Simon
Inness	-	Catskill Mountains
Lautrec	-	Portrait of Jeanne Wenz
Monet	-	Still Life: Apples, Grapes
Picasso	-	Henry Kahnweiler
Reynolds	-	Lady Sarah Bunbury
Ruisdael	-	Ruin of Egmond
School of Caravaggio	-	The Resurrection
S. di Pietro	-	Madonna with Saints Jerome and Bernadine
Soutine	-	Cagnes
Van der Spelt	-	The Blue Curtain
Van Gogh	-	Room at Arles

For items 127-131 choose your answer from the three columns below:

A. Blume	A. Inness	A. Ruisdael
B. Bracque	B. Lautrec	B. School of Caravaggio
C. Chagall	C. Monet	C. S. di Pietro
D. De Chirico	D. Picasso	D. Soutine
E. El Greco	E. Reynolds	E. Van Gogh

127. This painting has an exhilarating wavy movement throughout; makes use of contrasting colors red-orange and yellow-green to accentuate movement; has not a single straight line in the whole picture.

128. This painting tries to portray an idealized, classic beauty. It uses subdued colors and increases the feeling of grandeur and dignity by the use of a low eye level so that the subject appears as seen from below.

129. This painting is comparable to the painting referred to in item 128 in its subdued colors but it contrasts in that it presents its subject without idealization and without dignity or grandeur. It has a "pixyish" quality somewhat emphasized by the awkwardly off-center placement of the main subject.

130. This painting is an example of impressionistic use of warm and cool colors to vividly delineate objects and their shadows bathed in light.

131. This painting achieves a reposeful, restful effect through the representation of minimal activity within a vast space, with colors relatively subdued in saturation and so handled to suggest a windless, rather hazy atmosphere.

(5 of 13 items)

- - - - - - - - - - - - -

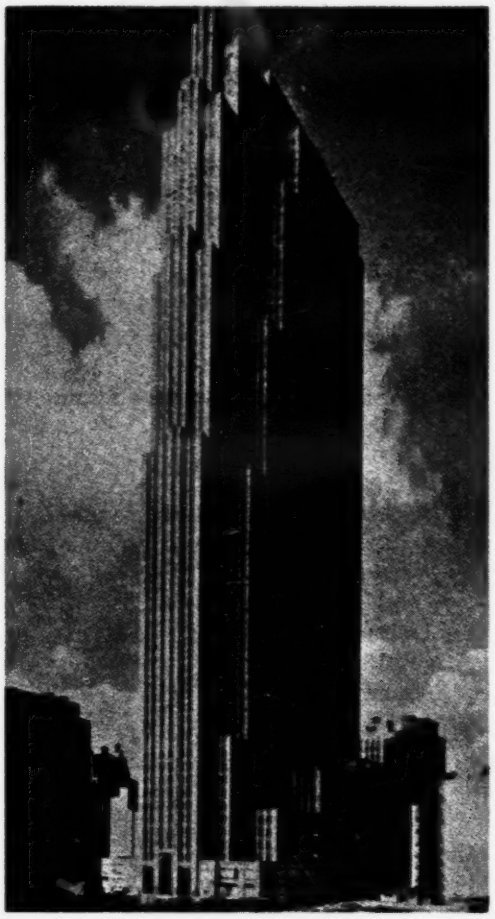
132. Which two paintings particularly emphasize the two-dimensional or flat pattern effect in their composition?
A. Picasso and Monet.
B. De Chirico and El Greco.
C. di Pietro and Bracque.
D. Bracque and Chagall.
E. Reynolds and Caravaggio.

133. Which two paintings contrast most as examples of form given through linear contour and form given through painted color surface respectively?
A. Reynolds and School of Caravaggio.
B. di Pietro and Monet.
C. Van Gogh and Soutine.
D. De Chirico and Blume.
E. Inness and Ruisdael.

134. Strong, parallel horizontal lines give a peaceful, serene quality to this painting which is made romantic by having the light fall on the middle distance and not the foreground.
A. Ruisdael.
B. Monet.
C. El Greco.
D. Inness.
E. Soutine.

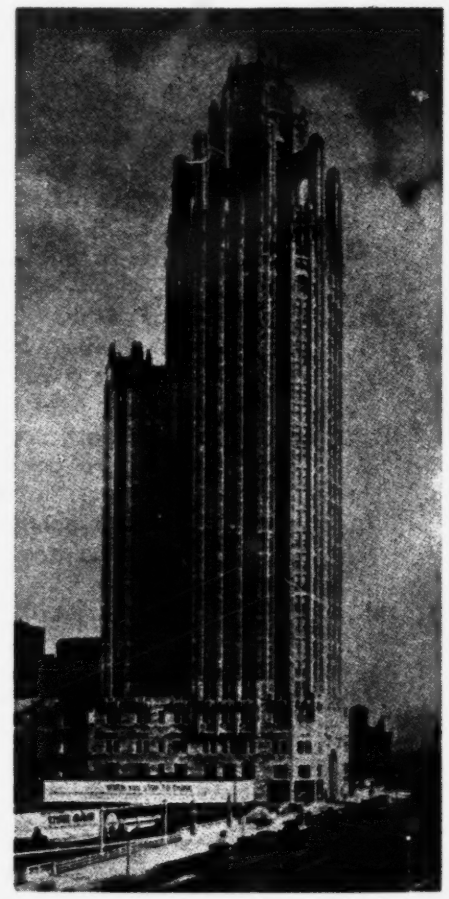
135. Here beauty is evidently shown to exist as an integral part of the process of death and decay.
A. Chagall and De Chirico.
B. School of Caravaggio and Van der Spelt.
C. Blume and Ruisdael.
D. Picasso and Van Gogh.
E. El Greco and Reynolds.

(4 of 7 items)



I

II



III

Suppose Louis Sullivan were able to study the three buildings above (all constructed after his retirement). In each of the following items, blacken the <u>one</u> lettered space that best indicates his probable reaction.

136. The architect of Building I has
   A. exploited decorative features of Gothic architecture.
   B. used several elements of classic architecture.
   C. illustrated my rule, "form follows function."
   D. combined many different architectural styles.

137. I admire that quality of Building I which permits it to
   A. unite in an over-all plan a great variety of designs.
   B. achieve beauty through revelation of structure rather than by decoration.
   C. reproduce the vital restlessness of Gothic architecture.
   D. achieve stability by dominant horizontal lines.

138. The architect of Building II
   A. used many elements of classic architecture.
   B. illustrated my rule, "form follows function."
   C. used many decorative features of Gothic architecture.
   D. followed the Byzantine theories of architecture.

139. I criticize the style used by the architect of Building II because among other things, the
   A. building is asymmetrical.
   B. design is too plain and severe.
   C. design is merely functional without regard to appearance.
   D. emphasis on balance destroys the harmony of the structure.
   E. emphasis on horizontal lines weakens the unity of effect.

140. The architect of Building III
   A. used many elements of classic architecture.
   B. illustrated my rule, "form follows function."
   C. used many decorative features of Gothic architecture.
   D. followed the Byzantine theories of architecture.

141. One element of the style of Building III which might be fitting for a skyscraper is the
   A. elimination of nonfunctional details.
   B. emphasis on vertical lines.
   C. heavy horizontal lines holding the building to the ground.
   D. perfect symmetry.

142. My theories for good architecture are repeated in painting by an artist who greatly influenced post War II architects. This painter was
   A. Paul Cezanne.
   B. Piet Mondrian.
   C. Pablo Picasso.
   D. Vincent Van Gogh.
   E. Jackson Pollack.

(7 of 13 items)

The following items refer to The Great Gatsby by Fitzgerald.

143. Which of the following statements best expresses the way the East is represented in this novel?
A. The East is romantic, charming and intellectual; it is a better place to live in than the West.
B. The East is fast-paced, vicious, savage and raw; it is a place where only the crude can survive.
C. The East is old, rich, luxurious and pure; it is friendly only to the good.
D. The East is fashionable, rich, fast-paced and corrupt; it is less innocent than the West.
E. The East is cultured, civilized, and mature; it is the citadel of stable traditions.

144. A "valley of ashes" is described in the second chapter of the novel. In what way does the description advance the overall meaning of the novel?
A. It provides a dramatic contrast between the poverty of East Egg and the luxuy of the area surrounding it.
B. It symbolizes the sterility of the world in which the characters live.
C. It serves to contrast with the luxury of the Wilsons' environment.
D. Its function is to remind the characters of the omnipresent fact that they too must in the end return to dust and ashes.
E. All of these are applicable.

145. It is fitting that Gatsby dies amid falling leaves on the day after the summer is over because
A. it serves to emphasize by contrast Gatsby's inability to settle down to the "winter" of hard work.
B. it gives symbolic meaning to the fact that Daisy and Tom are leaving that day for the South.
C. It serves to emphasize the seasonal, hence passing, nature of his love for Daisy.
D. it appropriately reflects the late middle age time of life he has reached.
E. the summer, the time of infinite promise, is over and so is his dream of regaining Daisy.

(3 of 15 items)

The following items refer to Plato's dialogue, Crito.

146. One of the most basic questions Socrates considers in this dialogue is whether
A. present circumstances or general principles should guide our actions.
B. Socrates should try to escape from prison.
C. Life would be worth living in a foreign city.
D. we should consider the opinion of the many.
E. we should consider the effects of our actions on others.

147. The Crito reveals that, for Plato, the foundation of ethics is
A. friendship, which binds people together and sustains them in troubled times.
B. justice, which punishes those who do wrong.
C. rationally grasped principles, which determine the choice of good and right.
D. external circumstances, since we are molded by our environment.
E. the natural operation of healty human passions and instincts.

148. According to Plato, the good of the community and the good of the individual
A. must inevitably clash as irreconcilable opposites.
B. are indissolubly bound up with each other, whether thy clash or not.
C. have only a remote relationship to each other.
D. are mutually exclusive and mutually destructive of each other.
E. can be satisfactorily interrelated only by political brute power.

149. Plato regards external goods like reputation and material wealth as
A. decisive factors in proper analysis of what should be done.
B. essential bases that properly determine action.
C. playing too little a role in deliberations concerning rights and wrongs.
D. essentially irrelevant to questions of right and wrong action.
E. things that never actually motivate anyone in reaching a decision.

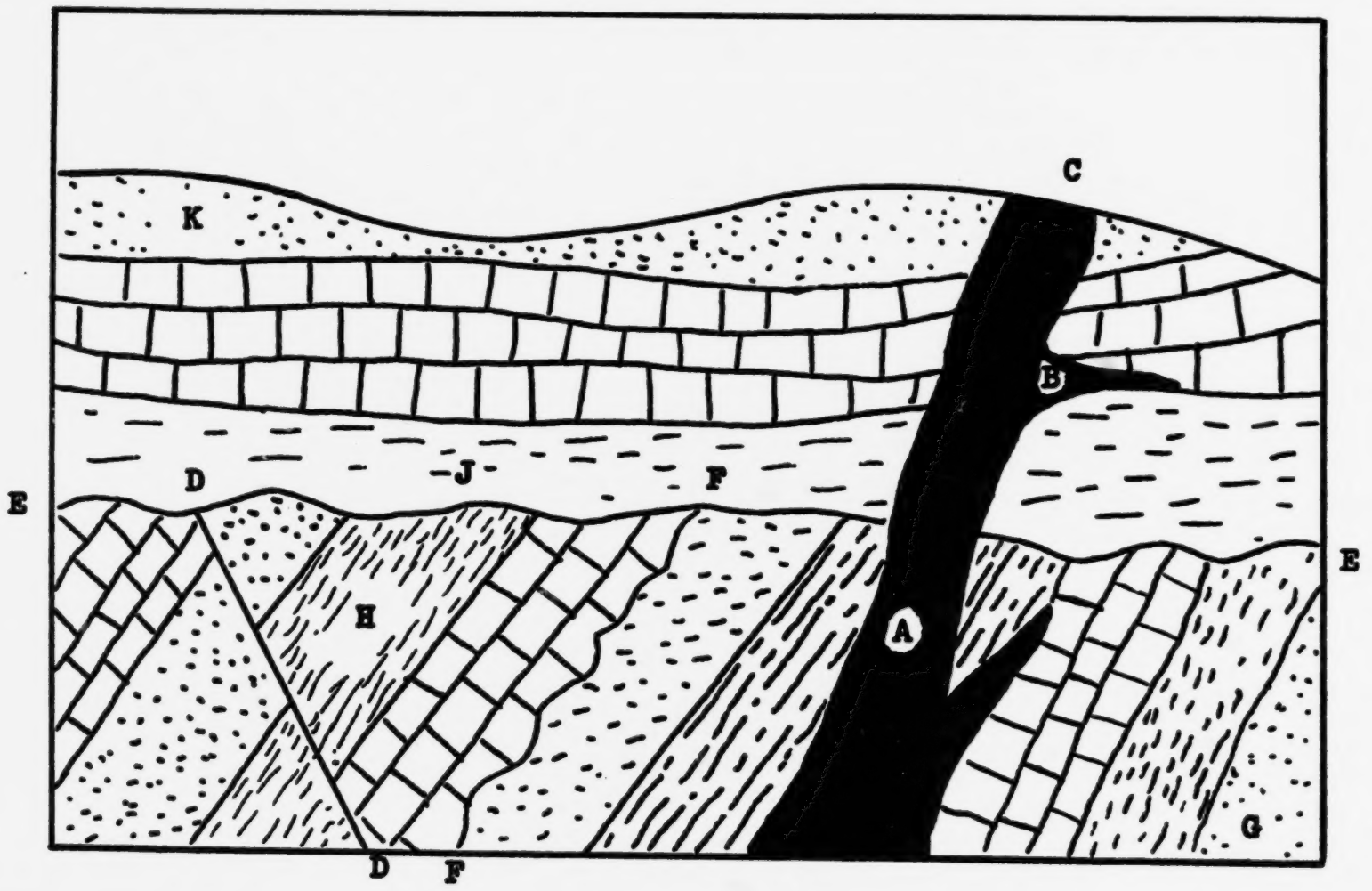
150. According to Socrates himself, what would be the consequences if he escaped?
A. He would thereby initiate the process necessary to revise the laws.
B. He would find a better life in Thebes or Megara.
C. His children would not be cared for by his friends.
D. He would benefit the world by being able to go on teaching his philosophy.
E. He would confirm the judgment that he was a corrupter of young people.

151. Plato concludes that Socrates will die wronged by men in order to point out that
A. law can function in community life without human administrators.
B. Socrates' friends should go after those men and punish them.
C. no one should injure someone else, even when wronged by him.
D. law is a good thing in itself, even though it may be badly applied.
E. law has no function in human affairs.

(6 of 10 items)

PHYSICAL SCIENCE

After each exercise number on the answer sheet, blacken <u>one</u> lettered space to designate the correct answer.



152. The rock J is of what age relative to the rock K?
A. Younger.
B. Older.
C. The same age.
D. Impossible to say.

153. In arriving at your answer to the preceding question it was necessary to apply the principle of
A. uniformitarianism.
B. igneous intrusion.
C. organic correlation.
D. superposition.
E. unconformity.

154. The age of D-D is what relative to E-E?
A. Younger.
B. Older.
C. The same age.
D. Impossible to say.

155. The rock A is of what age relative to G?
A. Younger.
B. Older.
C. The same age.
D. Impossible to say.

156. In arriving at your answer to the preceding question it was necessary to apply the principle of
A. uniformitarianism.
B. igneous intrusion.
C. organic correlation.
D. superposition.
E. unconformity.

157. Judging only by the diagram, the igneous activity that occurred in this area occurred
A. earlier than D-D.
B. earlier than E-E.
C. earlier than K.
D. not very recently.
E. in the age of dinosaurs.

158. We know this is true because
A. the igneous rock has cut through E-E.
B. dinosaurs have long been extinct.
C. erosion of igneous rock has occurred.
D. there are no caves in the diagram.
E. the igneous rock has come from a great depth.

(7 of 15 items)

For each of the following items, blacken one lettered space to indicate that the item would be true if the

A orbit of the earth were a circle rather than an ellipse
B orbit of the moon were exactly in the same plane as the orbit of the earth
C axis of the earth were not inclined
D distance to the moon from the earth were twice as great
E earth were a perfect sphere

(Assume that only one of the above imaginary conditions occurs at a time.)

---

159. We would know much less about the corona of the sun.

160. A mass weighing one pound at the equator would also have the same weight at either pole.

161. An eclipse of the sun would occur each month.

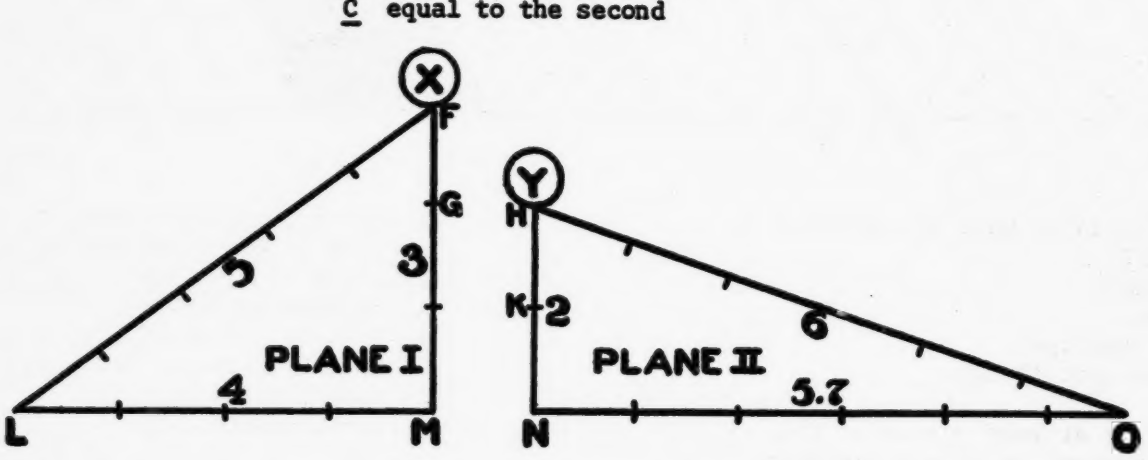
162. The earth would have no seasons.

163. The orbital speed of the earth would not vary during the year.

164. Night and day would be of equal length in all latitudes all year long.

For each of the following paired items, blacken one lettered space to designate that the first item is

A greater than the second
B less than the second
C equal to the second



Two spheres, X and Y, of equal masses and radii are placed on two inclined planes, as shown in the diagram. Neglect friction and air resistance, and assume that potential energy is measured from the level of points L, M, N, and O.

---

165. Potential energy of X at F. . . . . Potential energy of Y at H.

166. Potential energy of X at M. . . . . Potential energy of Y at N.

167. Kinetic energy of X on rolling to L. . . . . Kinetic energy of X on falling to M.

168. Kinetic energy of X on rolling to L. . . . . Kinetic energy of Y on rolling to O.

169. Work done on X in raising it from M to F. . . . Work done on X in moving it from L to F.

(5 of 14 items)

Suppose that four samples of different materials in powdered form are subjected to the following treatments:

When heated, Sample A melted at a relatively low temperature. When Sample A was dissolved in water, no reaction took place with the water, and the solution thus obtained would not conduct an electric current.

When an attempt was made to dissolve Sample B in a certain solvent, a black residue remained undissolved. When the solvent was poured off from the black residue and allowed to evaporate a yellow residue remained.

When Sample C was heated it melted at a much higher temperature than Sample A. When Sample C was dissolved in water, no reaction was observed to take place, but the solution thus obtained did conduct an electric current.

Sample D was subjected to experimentation. Evidence was obtained which showed that all of the atoms of D have the same atomic number, although there was some variation in mass.

After each item number on the answer sheet, blacken one lettered space to designate the sample material to which the item correctly refers.

---

170. When in solid form, positive and negative ions of this sample are held together by electrostatic forces.

171. All of the atoms in the sample are atoms of the same element.

172. This sample evidently consists of a non-ionic or covalent compound.

173. This sample is evidently a mixture.

174. This sample is evidently an ionic or electrovalent compound.

175. The molecules of this compound evidently have little attraction for each other.

176. The components of this sample are chemically uncombined and differ in chemical properties.

The numbers in the Modern Periodic Table printed above (in the examination itself) are the atomic numbers of the elements. After each item number on the answer sheet, blacken one lettered space to designate the correct answer. (The numbers given in the listed answers are the atomic numbers of certain elements)

---

177. In this sequence of elements, the tendency is to lose electrons and this increases the larger the atomic number.

178. All of the elements in this sequence are inert.

179. All of these elements have been synthesized and none occur in nature.

180. Electrons in the outermost energy level increase from one to as many elements as are listed in the answer.

181. In this sequence of elements, the tendency is to gain electrons and this increases the smaller the atomic number.

A. 93, 94, 95, 96

B. Elements of group IA

C. Elements of group VIIA

D. 2, 10, 18, 36, and 54

E. 11, 12, 13, 14, 15, 16, and 17

- - - - - - - - - - - -

182. In general, the hydroxides of these elements are strong bases.

183. These elements form the negative ions, or part of the negative ions, of certain acids widely used in industry.

184. These elements are some of the ductile heavy metals of industrial importance.

185. In these elements, the number of electron orbits are respectively 3, 4, 5, and 6.

186. One of these elements is a constituent of all plant and animal tissue while the others are major constituents of various rocks.

A. 26, 27, 28, 42, and 78

B. Elements in groups IA and IIA

C. 6, 14, 12, and 20.

D. 13, 31, 49, and 81.

E. 7, 16, and 17

The Atomic Pile for the Production of Pu-239

A pile is made of layers of U-238, graphite bars, and cadmium bars. High energy neutrons are slowed by the carbon moderators and thus are ready for absorption by the atoms of U-238.

In symbols, the nuclear reactions are

$$^{235}_{92}U \longrightarrow \text{fission fragments} + \text{several } {}^{1}_{0}n + \text{energy}$$

$$^{238}_{92}U + {}^{1}_{0}n \longrightarrow {}^{239}_{92}U$$

$$^{239}_{92}U \longrightarrow {}^{239}_{93}Np + {}^{0}_{-1}e$$

$$^{239}_{93}Np \longrightarrow {}^{239}_{94}Pu + {}^{0}_{-1}e$$

If the neutron concentration becomes too high, as shown by neutron counters placed within the pile, the condition is corrected by insertion of cadmium bars. An outside continuous source of neutrons is not required because neutrons are supplied by fission of some of the U-235 atoms originally present (0.70 per cent) in the U-238 and by fission of some of the newly formed Pu-239 (the product of the pile).

---

187. To be accepted into the nucleus by Uranium (238), neutrons must be (A. fast; B. energetic; C. hot; D. slow; E. fresh from an outside source).

188. $^{239}_{93}Np$ is converted to $^{239}_{94}Pu$ by (A. bombardment with more neutrons; B. bombardment with deutrons; C. bombardment with alpha particles; D. ordinary radioactive disintegration).

189. Of the particles and nuclei listed above in symbols, the one which is an <u>isotope</u> of U-238 is the
A. $^{239}_{94}Pu$. B. electron. C. $^{238}_{93}Np$. D. $^{238}_{92}U$. E. $^{239}_{92}U$.

190. After the second reaction has started, it is kept going by neutrons supplied in part by (A. an outside source; B. Np-239; C. Pu-239; D. U-234; E. U-239).

(4 of 9 items)

Two theories are used at the present time to explain the nature of light and other electromagnetic radiation. The first of these theories is the wave theory which proposes that all electromagnetic radiation consists of waves whose period and frequency coincide with the period and frequency of the source which gives rise to the waves. The second of the theories is the corpuscular or quantum theory of radiation which proposes that all electromagnetic radiation consists of corpuscles or packets of energy, the energy content of any one packet being dependent upon the energy difference between two stationary energy states of an atom or molecule. For each item blacken <u>one</u> lettered space to indicate that the observation described by the item

<u>A</u> supports or can best be explained by the wave theory of radiation
<u>B</u> supports or can best be explained by the corpuscular theory of radiation
<u>C</u> can be explained equally well by either theory
<u>D</u> cannot be explained by either theory

---

191. When radiation passes through an aperture or past the edge of an obstacle, it always spreads to some extent into the region which is not directly exposed to the oncoming radiation.

192. When a beam of light is incident on certain materials, such as cesium, electrons may be ejected from the material, the maximum speed of the ejected electrons being independent of the intensity of the incident light.

193. When light from a single source is split into two beams by passing the light through two slits and then allowed to fall on a screen, a symmetrical pattern of evenly spaced light and dark bands or fringes may be observed.

194. The velocity of light (and other electromagnetic radiation) in a vacuum has been accurately determined to be 2.99776×10^{10} centimeters per second.

195. When a beam of light is incident (in a direction other than perpendicular) on a boundary between two media in which the velocity of light is different, the transmitted beam will have a direction different from that of the incident beam.

SOCIAL SCIENCE

"...In the Dobu society where no one may work with another and no one may share with another, Dr. Fortune describes the individual who was regarded by all his fellows as crazy. He was not one of those who periodically ran amok and, beside himself and frothing at the mouth, fell with a knife on anyone he could reach. Such behavior the Dobu did not regard as putting anyone outside the pale. They did not even put the individuals who were known to be liable to these attacks under any form of control. They merely fled when they saw the attack coming and kept out of the way. 'He would be all right tomorrow.' But there was one man of sunny, kindly disposition who liked work and liked to be helpful. The compulsion was too strong for him to repress it in favor of the opposite tendencies of his culture. Men and women never spoke of him without laughing; he was silly and simple and definitely crazy."

Ruth Benedict

After each item number on the answer sheet, blacken one lettered space to designate the best answer.

196. The best judgment we can make from the paragraph is that
   A. people are crazy because their cultures force them into crazy behavior.
   B. the Dobu culture needs to be reformed.
   C. social pressure to conform to the rules of the group is very strong.
   D. our culture is more rational than that of the Dobu.

197. The best interpretation that can be made of the paragraph is that
   A. normality is relative to a culture.
   B. emotional stability is rewarded in all societies.
   C. crazy people are born that way.
   D. common needs persist in human behavior everywhere.

198. The Dobuan man "who liked to work and liked to be helpful" can be considered as
   A. well-adjusted.
   B. maladjusted.
   C. intelligent.
   D. feeble-minded.

199. The attitudes of the Dobuans illustrate
   A. the disregard for human life among all primitive peoples.
   B. the ineffectiveness of social controls among all primitive peoples.
   C. the inferior system of values among primitive peoples as compared to civilized peoples.
   D. the difference in accepted standards of behavior between Dobu culture and our own.

After the item number on the answer sheet, blacken one lettered space to designate the statement suggesting the most significant relationship between the two things. (A statement may be correct, but not an expression of the most significant relationship.)

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200. Social problems --- Social values.
   A. Values come after problems.
   B. Both are part of the scientific method.
   C. Social problems always involve study of social values.
   D. The solution of a social problem depends on the ability to eliminate social values.

201. Social change --- Culture lag.
   A. Widespread and rapid social change in the material culture is frequently accompanied by a relatively unchanging non-material culture.
   B. Culture lag is just another name for social progress.
   C. Culture lag brings about social change.
   D. Social change characterizes civilized society; culture lag characterizes primitive society.

202. Culture --- Race.
   A. Culture and race are closely connected since only certain races have been able to achieve high levels of cultural development.
   B. The fact that the Chinese had developed a complex civilization over two thousand years ago shows that they were more intelligent than the people living on the British Isles at that time.
   C. Many factors are involved in the development of a high cultural level but any race can learn that culture if adequately exposed to it.
   D. Only certain races have the sensitivity required to become "truly cultured."

Imagine that you are listening to a symposium on "The Nature of Social Change." Identify the remarks made by each of the following participants:

A Millikan
B Mead
C Freud
D Dewey
E Banfield

---

203. Before the discussion gets under way, I think we should remind ourselves that no matter what changes are made in society, we will still be dealing with the same basic personality structures and drives. Social change is not the most important factor in understanding man and society.

204. I cannot agree. As the social environment changes, the forces impelling man to act also change, giving rise to a new pattern of habits and therefore to different behavior.

205. The basic nature of man is not the issue here. Social change is a necessary accompaniment of modern life. The real question is how to utilize the research of social scientists who have studied change in a way that will deepen the insight of the people responsible for effecting change.

206. One answer to that problem is to study examples of societies that have made significant social changes. From such studies, principles may emerge which can help man make deliberate changes in his society.

207. I wonder if that is enough. More than the desire to change is needed. A society can be so crippled by social and economic weaknesses that change is unlikely even if the best intentions and efforts exist.

208. I am afraid this discussion is becoming trapped in mechanical hypotheses. Change is a constant feature of society. The essential problem is developing a society in which change contributes to the heightening of man's awareness of his actions and the fullest development of his potentialities.

(6 of 10 items)

Imagine yourself listening to a panel-discussion. Participants are Carr, Ortega, J. S. Mill, Marx, and Rousseau. The topic for discussion is: "What is Human Nature?" Identify the remarks made by each of the following participants:

A Rousseau
B J. S. Mill
C Ortega
D Carr
E Marx

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209. "That elusive entity 'human nature' has varied so much from country to country and from century to century that it is difficult not to regard it as a historical phenomenon shaped by prevailing social conditions and conventions."

210. "Man in a state of nature is neither good nor bad; he is an 'animal'."

211. "Unless taught to appreciate the principles of civilization, men will remain smug slobs."

212. "The passing from a state of nature to the civil state produces in man a very remarkable change, by substituting justice for instinct in his conduct, and giving to his actions a moral character which they lacked before."

213. "There is nothing in human nature itself which makes it a foregone conclusion that men must always be greedily competitive."

214. "Men are by nature conservative, they resist change and innovation."

The following items concern John Stuart Mill's essay On Liberty. After each item on the answer sheet, blacken one lettered space to indicate the correct answer.

215. According to Mill, the struggle between liberty and authority at present is primarily a problem of
A. restricting the power of rulers having interests antagonistic to the interests of their subjects.
B. establishing representative (elective) institutions of government.
C. protection of individuals against the tyranny of prevailing opinion and feeling.
D. substituting the true "will of the majority" for a so-called "will of the majority" that is really only the will of a small group.

216. Mill holds that freedom of action for the individual, though not as unqualified as freedom of opinion, is necessary in part, because
A. man is by nature an uncontrollable animal.
B. it allows men to judge better the consequences of their opinions as to the proper way of life.
C. conformity of any kind is morally wrong.
D. men are too easily convinced that they should accept set codes of behavior.

217. Mill's fundamental argument in favor of freedom of speech is that
A. suppression of freedom may mean suppression of truth.
B. men are naturally free.
C. all men are created equal.
D. freedom is more important than justice.
E. the masses must have a "safety-valve."

218. For Mill what is the relationship between liberty of thought and liberty of speaking and writing?
A. Men have complete liberty of thought, but not of speaking and/or writing since these can harm others.
B. Men have complete liberty of thought and speech, but not of writing since printed matter can reach so many people and thus affect them or harm them.
C. Men can think as they will, but speeches and writings must not conflict with the traditional standards of the community.
D. Liberty to speak and to write are impossible to separate from liberty of thought.

(4 of 30 items)

For each of the following items, blacken one lettered space to designate that the item would most likely be said by

A a communist
B a fascist
C a liberal democrat
D more than one of the above
E none of the above

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219. We believe that when a case rests on erroneous statements of fact, the majority in society will hold it to be a bad case. We also believe that when a case rests on proved facts and accepted principles, the majority of the electorate will give it favorable consideration. Men are reasonable enough to know what is good for them.

220. Our party must be, first of all, the vanguard of the working class; it speaks for the working class, and yet it leads the working class in its historic mission. The working class without a revolutionary party is an army without a general staff.

221. In our basic philosophy the growth of empire, that is to say the expansion of the nation, is an essential manifestation of vitality, and its opposite is a sign of decadence.

222. Our country must be defended, and defend it we will. No sacrifice is too great in this life-and-death struggle with evil. We will fight on the beaches, in the air, and at every city gate to defend our homeland.

223. There are probably two sides to every question. Conflicts in society are inevitable. Conflicting interests should be debated in public, and then a vote should be taken, and the decision of the majority should become public policy.

224. The state is an organic, conscious entity with a will and a personality of its own.

225. Though people may contribute unequally to society due to unequal ability, they shall receive according to their need.

(7 of 13 items)

Suppose that the following paragraphs are from a political speech made by a candidate for Congress from the First District of Illinois.

Every Congressman should be intimately identified with and should keep in close touch with the citizens of his district. Their wishes ought to have great weight with him; their opinions high respect; their business constant attention. It is his duty to sacrifice his leisure, his pleasure, his satisfactions to theirs -- and in every case to favor their interests over his own.

But regardless of this, he should never give up his mature judgment or enlightened conscience. Your Congressman owes you, not merely hard work, but his critical judgment; and he betrays, instead of serving you, if he merely sacrifices it in favor of your opinions.

My opponent promises to carry out your every wish -- as though this amounts to representation! If government were only a matter of wishes, of course your wishes should be the ruling ones. Illinois voters in that case might save the great expense of sending representatives to Congress, and just mail in a record of their wishes.

All opinions have a right to be considered, especially those welcome ones from voters. But whoever feels that the voice of the voters should bind their representatives, with no possibility of disagreement -- these persons advocate things utterly unknown to the laws of this land, and misinterpret the nature of our political system.

Congress is not a gathering of ambassadors from different regions, with each member pledged to support or oppose, depending on his own locality's desires. It is a deliberative assembly of one nation, with one interest, that of the whole -- where not local purposes, not local prejudices ought to guide, but the general good.

After you have chosen your representative, he is not a representative of the First District of Illinois; he is then a member of Congress. At that time, if one of you attempts to pressure him into accepting a hasty opinion which is clearly against the real good of the community, he ought to reject it outright.

--Adapted from Edmund Burke's "Speech to the Electors of Bristol"

Assume that Congressman John Doe of Illinois made the speech above. Answer each item below in terms of the information and viewpoint expressed in the speech.

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226. The speech deals primarily with the problem of the extent to which representatives should
   A. influence their constituents' decisions.
   B. consider the wishes of their fellow congressmen.
   C. follow their constituents' requests.
   D. campaign among their constituents.

227. A basic assumption made by Congressman Doe is that
   A. the judgments of congressmen are more likely to be valid than are those of the voting public.
   B. voters usually consider the general good.
   C. laws prohibit voters from exerting pressure upon their representatives.
   D. congressmen ought to carry out the wishes of the voters.

228. Congressman Doe believes that attainment of the "general good" most of all requires
   A. that each congressman promote the good of his constituents.
   B. critical reasoning and mature judgment of the nation's best interest.
   C. critical evaluation of local interests to determine what most of the people in the United States really want.
   D. closing one's ears to the uninformed opinions of voters.

229. The Congressman regards the wishes of his constituents as
   A. unworthy of any consideration.
   B. suggestions for his serious consideration.
   C. binding on him.
   D. reasoned statements.

230. The Congressman probably feels that a representative
A. owes no obligation to his constituents.
B. should try to provide harbor improvements for his constituents if they want them.
C. should try to provide harbor improvements if his constituents can prove they need them.
D. should try to provide harbor improvements if he believes the country would also benefit.

231. The validity of the Congressman's argument depends upon acceptance of which of the following propositions?
A. The exercise of reason benefits any pending legislation.
B. The good of the whole outweighs the good of the part.
C. A legislator probably has a better chance of knowing all the circumstances surrounding a bill than has the general public.
D. all of the propositions above.

Sam Rayburn, for several years Speaker of the House of Representatives, said at one time: "I think that a member of Congress....is primarily elected to reflect the sentiment of that one district. He's got to do that, or they've got to have faith enough to believe that he can do that, or they take him out, anyhow. If a subject is discussed enough and the people know enough about it to have an opinion and he knows that that's their opinion, unless he is convinced that is utterly wrong, I think he ought to follow it, but I also think that if a man can't lead the sentiment of his district, he's in trouble."

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232. Comparing the opinions of Congressman Doe and of Rayburn, we can be reasonably certain that they agree on the
A. need to vote against what they regard as a genuinely harmful bill.
B. advantage of public opinion polls.
C. lack of capacity of the voting public to make reasonable decisions.
D. necessity for ignoring pressure groups.

233. An important difference between Congressman Doe and Rayburn is that Rayburn
A. thinks the opinions of voters can be safely ignored.
B. is more concerned with the general good.
C. is more concerned with winning elections.
D. is not swayed by emotions.

234. In his last sentence Rayburn implies that it is safe for a congressman to follow the opinion of his constituents only if
A. he plays a part in forming that opinion.
B. he is convinced they are absolutely right.
C. he has no opinion of his own on the subject.
D. he has no concern for the general good.

235. Both Congressman John Doe and Sam Rayburn discuss a condition which is most related to which one of the following basic problems of government?
A. Which is better, a parliamentary or presidential form of government?
B. Which is better, a democratic or totalitarian government?
C. Which is better, a government by an élite (superior persons), or government by the people.
D. Which is better, a government of laws or a government of men?

ENGLISH		BIOLOGY		HUMANITIES		PHYSICAL SCIENCE		SOCIAL SCIENCE	
Item	Key	Item	Key	Item	Key	Item	Key	Item	Key
1	C	66	D	113	B	152	B	196	C
2	B	67	E	114	D	153	D	197	A
3	D	68	B	115	C	154	B	198	B
4	A	69	B	116	B	155	A	199	D
5	A	70	A	117	A	156	B	200	C
6	B	71	E	118	C	157	D	201	A
7	D	72	E	119	D	158	C	202	C
8	B	73	A	120	C	159	D	203	C
9	C	74	B	121	A	160	E	204	D
10	A	75	A	122	E	161	B	205	A
11	E	76	A	123	E	162	C	206	B
12	C	77	B	124	D	163	A	207	E
13	D	78	C	125	D	164	C	208	D
14	A	79	A	126	B	165	A	209	D
15	A	80	C	127	D	166	C	210	A
16	C	81	B	128	E	167	C	211	C
17	B	82	A	129	B	168	A	212	A
18	D	83	B	130	C	169	C	213	E
19	A	84	A	131	A	170	C	214	B
20	C	85	B	132	C	171	D	215	C
21	B	86	B	133	B	172	A	216	B
22	A	87	C	134	D	173	B	217	A
23	D	88	A	135	C	174	C	218	D
24	A	89	C	136	C	175	A	219	C
25	B	90	B	137	B	176	B	220	A
26	A	91	C	138	A	177	B	221	B
27	E	92	A	139	E	178	D	222	D
28	C	93	B	140	C	179	A	223	C
29	A	94	A	141	B	180	E	224	B
30	E	95	D	142	B	181	C	225	A
31	A	96	E	143	D	182	B	226	C
32	A	97	E	144	B	183	E	227	A
33	C	98	B	145	E	184	A	228	B
34	B	99	D	146	A	185	D	229	B
35	C	100	A	147	C	186	C	230	D
36	B	101	B	148	B	187	D	231	D
37	C	102	B	149	D	188	D	232	A
38	C	103	B	150	E	189	E	233	C
39	D	104	B	151	D	190	C	234	A
40	C	105	C			191	A	235	C
41	C	106	B			192	B		
42	D	107	D			193	A		
43	B	108	A			194	D		
44	D	109	B			195	A		
45	B	110	B						
46	A	111	A						
47	D	112	B						
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